

10. (Amended) [A nucleic acid] ^{isolated or recombinant} The polynucleotide of Claim 9, [wherein said nucleic acid] which:
- a) encodes a mature polypeptide [sequence] of SEQ ID NO: 2 or 4;
 - b) comprises [a sequence of] the mature polypeptide coding portion of SEQ ID NO: 1 or 3; [or]
 - c) encodes [a sequence from an] the extracellular domain of [a] SEQ ID NO: 2 or 4 [natural 312C2]; or
 - d) encodes [a sequence from an] the intracellular domain of [a natural 312C2] SEQ ID NO: 2 or 4;
 - e) attached to a solid substrate;
 - f) is detectable labeled; or
 - g) is in a sterile composition].

11. (Amended) [An expression or replicating vector] A recombinant expression or replicating vector comprising said ^{isolated or recombinant} polynucleotide of Claim 9.

12. (Amended) A kit comprising:
- [a) a substantially pure 312C2 or fragment of Claim 1;
 - b) an antibody or receptor which specifically binds a 312C2; or
 - c) a nucleic acid encoding a 312C2 or peptide]
 - ^{isolated or recombinant} a) said polynucleotide of Claim 9; and
 - b) instructions for use or disposal of reagents in said kit.

17. (Amended) A method of [expressing 312C2] producing a polypeptide comprising expressing [a nucleic acid of Claim 9] ^{recomb...} said vector of Claim 11, thereby producing said polypeptide.

18. (Amended) A cell [, tissue, organ, or organism] comprising ^{recombinant expression...} said vector [a nucleic acid] of Claim [9] 11.

19. (Amended) A recombinant [nucleic acid comprising sequence at least about 70% identity over a stretch of at least about 30 nucleotides to a 312C2 nucleic acid sequence of SEQ ID NO: 1 or 3] or isolated polynucleotide of Claim 9, that encodes at least 15 contiguous amino residues of SEQ ID NO: 4.

20. (Amended) [A nucleic acid] The polynucleotide of Claim 19, [further encoding a polypeptide comprising at least about 60% identity over a stretch of at least about 20 amino acids to a 312C2 sequence of SEQ ID NO: 2 or 4] wherein said contiguous amino residues number at least 17.

NEW CLAIMS:

Please add new Claims 23-43 as follows:

--23. (New) The polynucleotide of Claim 9, wherein said hybridization occurs over the entire open reading frame of SEQ ID NO: 1.

24. (New) The ^{isolated or recombinant} polynucleotide of Claim 9, wherein said polynucleotide:

- a) encodes a polypeptide with a natural sequence of the mature coding portion of SEQ ID NO: 2;
- b) encodes a polypeptide with a natural sequence of the mature coding portion of SEQ ID NO: 4;
- c) is isolated from nature;
- d) encodes a polypeptide comprising 5 or fewer conservative substitutions from a natural sequence of SEQ ID NO: 2; or
- e) encodes a polypeptide comprising 5 or fewer conservative substitutions from a natural sequence of SEQ ID NO: 4.

25. (New) The polynucleotide of Claim 9, wherein said wash conditions are

- a) at least 65° C;
- b) less than 150 mM salt; or
- c) both a) and b).

} Ask George about this one!

26. (New) A method of producing a polynucleotide duplex comprising contacting said polynucleotide of Claim 9 with a second polynucleotide for a time sufficient to produce said duplex under stringent wash conditions of at least 60° C and less than 200 mM salt; thereby forming said duplex. ^{isolated}

27. (New) The ^{isolated} polynucleotide of Claim 9, which is:

- a) is attached to a solid substrate;
- b) is detectably labeled;
- c) is in a sterile composition;
- d) encodes an antigenic polypeptide having at least 12 amino acid residues; or
- e) is synthetically produced.

28. (New) The polynucleotide of Claim 19, which comprises at least 57 contiguous nucleotides from the mature protein coding portion of SEQ ID NO: 1 or 3.

- isolated or recombinant*
29. (New) The polynucleotide of Claim 27, wherein:
- a) said contiguous amino acid residues number at least 21; or
 - b) said contiguous nucleotides are from nucleotides 26-165 or nucleotides 191-241 of SEQ ID NO: 4.
30. (New) An isolated or recombinant polynucleotide encoding a polypeptide that:
- a) has a conservative amino acid substitution of a mature polypeptide of SEQ ID NO: 2 or 4;
 - b) is a natural allelic variant of the mature native polypeptide of SEQ ID NO: 2 or 4; or
 - c) is a species variant of the mature native polypeptide of SEQ ID NO: 2 or 4.
- ? open?*
31. (New) The polynucleotide of Claim 30, which is from SEQ ID NO: 4.
32. (New) The polynucleotide of Claim 30, comprising:
- a) nucleotides 124 to 751 of SEQ ID NO: 1; or
 - b) nucleotides 54 to 723 of SEQ ID NO: 3.
33. (New) A method of producing a polynucleotide duplex comprising contacting said polynucleotide of Claim 30 with a second polynucleotide for a time sufficient to produce said duplex under stringent wash conditions of at least 60° C and less than 200 mM salt; thereby forming said duplex.
- What is a recombinant vector?*
34. (New) A recombinant expression or replicating vector comprising said ^{*isolated or recomb.*} polynucleotide of Claim 30.
- recombinant expression or replicating*
35. (New) A cell comprising said ^{*recombinant expression or replicating*} vector of Claim 34.
36. (New) A method of producing an antigenic polypeptide, comprising expressing said vector of Claim 34, thereby producing said ^{*antigenic*} polypeptide.
37. (New) A recombinant or isolated polynucleotide that selectively hybridizes to the open reading frame of SEQ ID NO: 1 or 3 under stringent hybridization and wash conditions of at least 50°C, a salt concentration of less than 200 mM, and 50% formamide.

38. (New) The polynucleotide of Claim 37:

- a) wherein said wash conditions are at least 60°C;
- b) that encodes an antigenic polypeptide;
- c) comprises at least 36 contiguous nucleotides of the mature coding portion of SEQ ID NO: 1 or 3; or
- d) comprises at least 20 contiguous amino acids of the mature coding of SEQ ID NO: 4

39. (New) The polynucleotide of Claim 37, further encoding:

- a) a two-fold or less conservative amino acid substitution of a mature polypeptide of SEQ ID NO: 2 or 4;
- b) a natural allelic variant of the native polypeptide of SEQ ID NO: 2 or 4; or
- c) a species variant of the native polypeptide of SEQ ID NO: 2 or 4.

40. (New) A recombinant expression or replicating vector comprising:

- a) said polynucleotide of Claim 37; or
- b) the mature polypeptide of SEQ ID NO: 4.

41. (New) A cell comprising said *recombinant expression* vector of Claim 40.

42. (New) A method of producing an antigenic polypeptide, comprising expressing said vector of Claim 41, thereby producing said polypeptide.

43. (New) A method of producing a polynucleotide duplex comprising contacting said polynucleotide of Claim 37 with a second polynucleotide for a time sufficient to produce said duplex under stringent wash conditions of at least 60° C and less than 200 mM salt; thereby forming said duplex.—

Remarks

Applicants respectfully request examination and consideration of the new and amended claims and reconsideration of the application in view of the following remarks.

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